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FRONT COVER

Science Improves Corn in Europe

Dr. Renzo Scossiroli of Italy is one of the many European scientists who are working to adapt American corn hybrids to local conditions. (Photo courtesy of FAO.)

BACK COVER

Corn Acreage—Europe and the Near East

Broadening the Corn Belt of Europe and the Mediterranean by the introduction of hybrids is a major concern of FAO.

NEWS NOTE

U. S. Authorities to Study Trade Problems Abroad

On March 24 Secretary of Agriculture Benson announced that 34 leading authorities on agricultural production and marketing have been invited to serve as consultants in a series of special foreign trade studies about to be undertaken in Europe, Asia, and Latin America.

These consultants, divided into three groups, one for each area, are expected to leave the United States this month and to return late in May, when they will consult with the Secretary of Agriculture and other Government officials on their findings and recommendations. The sending out of these groups was proposed by President Eisenhower in his farm recommendations to the Congress on January 11, when he called for "a series of trade missions . . . to explore the immediate possibilities of expanding international trade in food and fiber."

The chief objective of the project is not to negotiate contracts or to arrange sales of any kind. Rather, it is to study how the United States can expand agricultural trade with Europe, Asia, and Latin America, the three biggest markets for exports of United States farm products. In 1952 Western Europe took $1.5 billion worth, or 43 percent of those exports; the Far East took nearly $1 billion worth, or almost one-fourth; and Latin America took somewhat more than half a billion dollars' worth.

Among the problems to be looked into are how to improve marketing and trade practices; remove roadblocks to United States exports; meet currency situations affecting agricultural trade; influence consumer preferences; and improve the quality, packaging, and handling of United States agricultural products.

The final success of this effort, Secretary Benson has pointed out, will be achieved as trade groups throughout the Nation follow through on the consultants' accomplishments and findings, and succeed in moving larger quantities of agricultural products through normal channels of trade.

Credit for photos is given as follows: p. 64, Food and Agriculture Organization of the United Nations; p. 71, adapted from *Danish Journal of Land Economics*, p. 205, May 1953; pp. 72-75, Henry W. Spielman.

FOREIGN AGRICULTURE ALICE FRAY NELSON, EDITOR

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Hybrid Maize Emigrates To The Old World

by R. W. JUGENHEIMER

Hybrid maize—hybrid corn in the United States—a product of American agriculture, has emigrated to the Old World. Directed against hunger and poverty, those allies of communism, hybrid maize has started a peaceful, constructive revolution in Europe, the Near East, and Northern Africa.

Hybrid maize is rapidly replacing open-pollinated varieties in many countries. In 1952, 15 percent of the maize in France was planted with hybrid seed. In the Netherlands, the acreage in maize increased from 10,900 in 1950 to 34,600 in 1952; hybrids were grown on at least 75 percent of this acreage. In Italy in 1952, hybrids increased production by at least 220,000 tons, worth $20 million. In France and Belgium, hybrid maize is replacing beets and potatoes on some land. In historic Greece 10 percent of the maize is hybrid. In Switzerland, maize can supplement grass for feeding, aid in eliminating black foot disease of wheat, and replace some of the excessive potato acreage. In Spain, Portugal, Egypt, Yugoslavia, Turkey, Germany, Austria, Algeria, and Morocco, American maize hybrids are giving promise that they will rapidly replace low-yielding varieties.

Benefits of Hybrids

Earlier maturity, higher yields, better standability, and greater resistance to insects, diseases, and drought are the characteristics of certain American hybrids that have helped boost the acreage and production of maize in Europe and the Mediterranean area. A recent survey by the Food and Agriculture Organization of the United Nations (FAO) indicates that the use of hybrid maize in Belgium, Egypt, France, Greece, Italy, Morocco, Netherlands, Portugal, Spain, and Switzerland in 1952 increased production by 273,000 tons, valued at $24 million. Potential increase from the use of hybrids in these 10 countries is at least 4 million tons. Turkey and Yugoslavia have large areas in maize that soon may profit greatly from the use of adapted hybrids.

The best of 45 American hybrids provided by FAO produced, on an average, 60 percent more grain than the best local, open-pollinated variety in 141 tests in 13 countries in 1952. If the 30 million acres of maize land in Europe were planted to the best available hybrids, the resulting increase in yield would be equivalent to the production of an additional 18 million acres.

The United States annually receives increased yields of at least ¾ billion bushels through the use of hybrids. This is an annual dividend of about $75 on each dollar originally spent on the hybrid maize program.

Although maize acreage in the United States has been declining during the past 20 years, and now is about one-fourth less than during the thirties, production continues upward because of greater use of hybrid seed, mechanization, and fertilizers. In fact, acre yields for 1941-50 were 10 bushels over those for 1924-33, the 10-year period prior to the advent of hybrids.

International Agencies Cooperate

Use of adapted American hybrids and modern production practices are gifts from the United States and Canada, which in time may help double the production of maize in many sections of the world. Maize, native to America, has gone out on that same two-way street of international cooperation that has brought to America many other important crops and many types and breeds of livestock and valuable processes and products like pasteurization, DDT, and penicillin.

Higher yields of maize at lower unit cost are being accomplished in European and Mediterranean countries by intercountry cooperation of technical workers.

Dr. Jugenheimer, Professor of Plant Genetics, University of Illinois, and in charge of maize improvement at the Illinois Agricultural Experiment Station, was until recently consultant on hybrid maize for the Food and Agriculture Organization of the United Nations, Rome.

These workers realize that no maize improvement effort is too small to contribute to the overall advance and no undertaking is too large to ignore the contributions from other countries. They also realize that successful cooperation cannot be dictated by anyone. It can best be accomplished by personal contacts that lead to mutual confidence. These personal contacts are attained by participation in annual meetings of the hybrid maize workers. This mutual confidence is resulting in a free interchange of breeding materials, performance test data, and improved techniques.

The present national hybrid maize programs in European and Mediterranean countries are supplemented in various ways through the activities of FAO, Foreign Operations Administration of the United States (FOA) and the Organization for European Economic Cooperation (OEEC).

FAO is the one organization whose primary function is to promote international cooperation in the fields of food and agriculture. Appropriately its motto is "Fiat panis," which means "Let there be bread."

To the cooperative hybrid maize program, FAO has contributed by:

1. Conducting an introductory course on hybrid maize breeding;
2. Providing seed and sponsoring uniform tests of American hybrids;
3. Compiling and publishing the results of performance tests, fertilizer trials, population density studies, etc.;
4. Sponsoring annual conferences of maize workers;
5. Encouraging the free interchange of breeding materials, research data, and improved techniques; and
6. Supplying advice on improved breeding and production techniques and procedures.

OEEC and FOA have provided technical assistance in the breeding and production of maize, and have sponsored the importation of seed for commercial plantings, and of foundation single-cross seed for European production of double-cross hybrid seed. These organizations have, in addition, sponsored two surveys of the work on hybrid maize.

Testing American Hybrids

The cooperating maize breeders at their first meeting, held at Bergamo, Italy, in 1947, decided to test certain American hybrids of known pedigree on a regional basis, in order to fit the varying conditions in the areas. In 1952, the hybrids in test represented a maturity range from 70 days to 155 days. Additional open-pedigree and some closed-pedigree hybrids were tested on a limited basis in a few countries. Hybrid seed for testing was obtained from the United States Department of Agriculture, State agricultural experiment stations, foundation-seed-stocks organizations, crop improvement associations, the American Seed Trade Association, and commercial seed firms in the United States and Canada.

Adapted maize hybrids outyield regular varieties by 25 to 30 percent, says Santo Salvoni, who farms 250 acres in northern Italy. Mr. Salvoni, like many other European farmers, is cooperating with scientists in their efforts to develop lines and hybrids suitable for local conditions.

Location of the tests in 1952 ranged from Vidarshov, Norway, at a latitude of 60° 48′ N. to Sids, Egypt, at 28° 54′ N. and from western Portugal to eastern Turkey. Based on regional tests conducted in 1950, 1951, and 1952, the following FAO-distributed hybrids in each maturity group produced the highest grain yields:

Days to maturity	*Hybrid designation*
70	Wisconsin 1600
75-80	Canbred 150
80-85	Wisconsin 255
85-90	Wisconsin 270
90-95	Wisconsin 355
95-100	Minhybrid 607
100-105	Wisconsin 464
105-110	Ohio M15
110-115	Wisconsin 641AA
115-120	Ohio K24
120-125	Indiana 419A
125-130	Ohio C92
130-135	Kansas 1859
135-140	Indiana 909A
140-145	Dixie 33
145-155	Dixie 11

Arranged from early to late, the following hybrids produced the highest yields of silage and green feed: Wisconsin 240, Wisconsin 416, Indiana 419A, and U.S. 13. In addition, many other American hybrids not compared on a uniform basis in these international tests performed satisfactorily in individual countries.[1]

Developing New Hybrids in European and Mediterranean Countries

The use of American hybrids in areas outside the United States and Canada is a temporary expedient. Workers in many of the countries now are cooperating on developing inbred lines and hybrids especially adapted to the widely differing purposes and climatic regions of Europe and the Mediterranean area.

Breeders must incorporate many desirable traits into their hybrids.

Among these traits is relative maturity of the hybrids. Maturity at an early age is the prime consideration in northern Europe, in order to provide a high yield of sound grain during the limited growing season. Maturity at a later age is necessary in the Mediterranean area, to take full advantage of the extremely long growing season. Maturity in hybrids is determined by genetic factors that are greatly affected by temperature, soil fertility, rainfall, rate and date of planting, and length of days and growing season. Hybrids must also be adapted to different plant populations, soils, and fertilizer treatments.

The plant and ear must be suitable for particular uses. For feed, for instance, ears should be yellow in color, soft in texture, and high in quality and quantity of protein. For dry milling, ears should be white, with smooth dent. For such food as polenta, flinty types are required. For livestock areas, consideration must be given to developing a plant that yields a high tonnage and quality of silage and green feed. In the United States, we require waxy maize with 100-percent amylopectin for food and glue. Some breeders are developing high oil maize for industry and high energy feed. High zein maize is useful for special fabrics, and a high amylose maize would be very valuable for plastics, cellophane, and films. In the United States the crop is used for more than 500 different purposes. Wide use may one day be made of it in Europe, too. Already, industrial plants are springing up over Europe. Italy, France, and several other countries have large starch plants, and Yugoslavia has a new plant to manufacture maize flakes.

Hybrids must consistently provide high yields of grain, silage, and fodder. Genetic, environmental, and cultural factors affecting number and weight of seeds need to be studied. Theoretically, multiple-eared plants should be more efficient than single-eared types since a smaller percentage of the plants' energy would be used for plant development compared to ear development. Nontillering types are needed for grain production. Heavy-tillering strains are useful for silage and green feed.

Excellent standability has contributed greatly to the popularity of hybrids. Lack of standability results in lowered quality and yield and more difficult harvesting. Variations in standability between hybrids are caused by differences in stalk structure, root system, ear height, soil fertility, plant population, and resistance to insects and diseases.

Gibberella zeae and *Diplodia zeae* cause the stalk to rot and fall. European corn borers tunnel into the plant and cause it to break and fall. Chinch bugs sap the plant and cause it to wither and die. Smut (*Ustilago zeae*) materially lowers yield. Techniques have been developed to aid in obtaining hybrids with greater resistance to these hazards.

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[1] Published reports of the results of the "Cooperative Hybrid Maize Tests in European and Mediterranean Countries" in 1948, 1949, 1950, 1951, and 1952 are available from the Food and Agriculture Organization of the United Nations, Rome, Italy.

Some sections require maize that is resistant to cold. In general, flint maize germinates better and has more vigorous seedling growth than dent. Resistance to cold appears to be associated with seed coat injury during seed processing. Many sections urgently require hybrids that are resistant to heat and drought.

For hand harvesting, farmers desire single-eared strains with the ear borne at a convenient height. They object to harvesting small ears of multiple-eared hybrids by hand. There can be little objection to two-eared strains, however, if the harvesting is done mechanically. For some sections, ease of harvestability with a mechanical picker is an important character that should be bred into new hybrids. It includes such factors as ear droppage, ears left on the plant, husks left on harvested ears, shelled grain left on the ground, and time required to harvest.

Other desirable traits needing consideration are high germination, longevity of seed, proper husk cover, high grain quality, high shelling percentage, and resistance to chemical weed sprays. Eventually European seedsmen will wish to utilize male sterility to eliminate detasseling in the production of hybrid seed. New improved hybrids—many of them involving inbred lines from America and Europe—should soon be forthcoming from some of the many breeding programs in European and Mediterranean countries.

Seed Production and Processing

Hybrid seed could be available to plant all of the European maize acreage in a few years. The actual change from open-pollinated maize to hybrids, however, will depend largely on the superiority of the hybrids, availability of seed, effectiveness of the extension programs, and freedom from government control. Assuming arbitrary rates of planting and yields it should be possible to start with 25 acres of inbred lines in 1954 and have plenty of hybrid seed to plant 30 million acres of farm fields in 1957. Purchasing some of the inbred and single-cross seed in the United States would materially hasten the procedure.

Minimum seed certification standards for maize in European and Mediterranean countries were approved by delegates to the Sixth Hybrid Maize Meeting held in Lisbon, Portugal, in February 1953 and have been submitted by FAO to the governments concerned, with a recommendation that the standards be officially adopted. These standards should safeguard the interests of farmers and facilitate international trade in seed maize.

The experience and facilities of American seedsmen can be utilized in many other parts of the world. In Italy most of the hybrid seed is sold in bags under three well-known United States trademarks. This seed is produced in the fertile Po River Valley of Italy with Italian personnel. Similar opportunities appear to be available in Turkey, Yugoslavia, Egypt, and other large maize growing areas. Substandard and unadapted seed should not be exported from the United States. American seedsmen need to jealously protect their excellent reputations for producing and selling only seed of the highest quality.

Production Practices of Farmers

Desirable production practices can make neglected land much more productive. Records kept on test plots at the University of Illinois for more than 75 years show maize yields ranging from about 15 bushels per acre on the untreated, continuous maize plot to more than 100 bushels per acre on the maize-oats-clover plot that has been given suitable amounts of fertilizer. Food for plants is just as necessary as food for humans and animals. Genes for high yield in desirable maize hybrids can reach their fullest expression only when the plant is grown on soils well supplied with balanced amounts of plant food.

Number of plants per acre must be adjusted to the productivity of the soil and the water supply. To get optimum yields, smaller, earlier maturing hybrids need to be spaced more closely than larger, later maturing hybrids. Additional spacing and population studies need to be conducted in some countries. More efficient methods of cultivation, harvesting, and storage need consideration. Expansion and development of irrigation projects are needed in many dry areas.

Hybrid maize revolutionized American agriculture. And it promises to be an increasingly important crop in many other sections of the world, even in those where little or no maize is now being grown.

Canning Project In Iran

By **HELEN HUNERWADEL**

This summer, when the fruit and vegetables around Meshed, Iran, are ready for harvest, a modern demonstration canning plant will be ready for operation, if our plans carry through. The plant will be used as a training center for the first 5 years; then, it will become a model canning cooperative for the many fruit growers of the area. Plans for the demonstration canning plant grew out of an assignment I had last summer that took me to Meshed, where, as the result of a request from the Government of Iran for technical assistance in improving and expanding the country's canning industry, I was to make a study of existing factories and of potentials for developing the industry.

Meshed has five canning factories; four have been in operation for several years and one, idle for the past 2 years, reopened last summer.

The history of this canning industry interested me greatly. About 25 years ago, the owner of one of the canneries associated himself with an elderly man who had recently come from Russia and who claimed that he knew how to do commercial canning. Three of the other cannery owners learned from the first one and the fifth learned from his mother, who had received her training in Russia.

When I came to Meshed, these canners were all still canning as they had a quarter of a century ago, using Russian methods that even then were no longer in use in England, America, and certain other countries. In fact, as far as I know, such methods were never used in America. I have been canning or helping with it for many years, and I had never heard of packing food cold in the cans, adding cold sirup or brine, and sealing the cans cold before processing, which is what the canners at Meshed did.

Despite the way in which it is put up, much of the canned produce keeps, and some of it has fairly good color and flavor. Even so, the rate of spoilage is so high that it cuts down profits considerably and is one of the reasons why the price of canned food is beyond the reach of most Iranians.

I visited each factory, and the canners seemed to greatly appreciate any suggestions or advice I was able to give them.

At their request, I told them how to can strawberries and cherries and wrote out the recipes which were translated into Persian in the technical assistance office. I made some strawberry preserves, too, and took that to the canneries when I delivered the recipes. At each place, canners brought out some of their own product and were apparently quite impressed with the better color, texture, consistency, and flavor of the preserves I had made. Before I left Meshed, one of the men made some preserves by my recipe and brought it for my inspection. It was excellent, and I have never seen anyone prouder of an achievement.

The demonstration canning plant that we hope to have in operation in Meshed this summer will be a small community-type plant with two lines of operation—one using modern steam and electrically operated equipment and the other using oil burners and hand-operated equipment, as much of it as possible locally made. In this way, small as well as large community canning operations can be taught, and rural as well as urban areas served.

Meantime, to train two assistants—Mrs. Iran Moezzi and Mr. Hosein Bororgnia—so that they can help with the demonstrations in the new plant this summer and to help the personnel in the canneries in Meshed, I carried out a 6-week training course last summer. The course was a valuable forerunner for our project, it was felt, in that it prepared the canners for what is coming so that the bringing into their midst of what is to them a revolutionary change in canning methods will not be such a shock. It made them a part of a movement toward more and better canning in Iran. And it proved our method to them and gives them time to make adjustments in their factories.

It is the hope that we can, by teaching modern, safe methods of canning, help to make food available for distribution throughout Iran at reasonable prices, for Iran has a very real food problem. It has a large supply of food, but the supply is seasonal and because transportation is poor and refrigeration facilities generally lacking, there is great waste of food during the season and a scarcity of it out of season.

Mrs. Hunerwadel is home economist in charge of food canning under the technical assistance program, American Embassy, Tehran, Iran.

United States Programs To Aid Farm Exports

By HERBERT FERGUSON

The need for expanding exports of United States farm products is well recognized—quantities of United States farm commodities available for export during the past 2 years have come to exceed substantially the commercial world market demand. The reasons for this excess are also well-known—greater self-sufficiency of importing countries, greater competition from other exporting countries, less emphasis on stockpiling, currency exchange difficulties, discrimination against farm products from dollar countries, among others.

In an effort to help overcome its foreign marketing problems, the United States has undertaken a number of special programs. Because of the high degree of current interest in these programs, the following summary is presented.

Programs Underway

Section 550 of the Mutual Security Act of 1953 provides that, of the funds appropriated for purposes of the Act, between $100 million and $250 million be used to purchase United States surplus agricultural commodities or products for sale for foreign currencies. Under this program, which is administered by the Foreign Operations Administration (FOA), procurement authorizations for $100,060,000 worth of United States surplus agricultural commodities had been approved by March 1.

The major provisions of Section 550 are that (1) commodities moved to foreign markets must be in addition to those that otherwise would have been purchased in normal trade from the United States and friendly countries, (2) prices must be consistent with maximum world levels, (3) private trade channels are to be used to the maximum extent practicable; and (4) foreign currencies accumulated must be used in carrying out one or more of the purposes of the Mutual Security legislation.

These purposes include: Military assistance to the country or mutual defense organizations eligible to receive assistance under the Act; purchase of goods or services in friendly countries; loans for increasing production of goods and services, including strategic materials that may be needed by the United States or friendly countries; purchases for United States stockpiling programs and for developing new markets on a mutually beneficial basis.

Section 416 of the Agricultural Act of 1949 authorizes the donation under certain conditions of food commodities acquired through price support operations that are found to be in danger of loss through deterioration or spoilage. Such donations can be made only if the commodities involved cannot be disposed of in normal channels of trade without impairing the price support program.

Commodities falling into this category may be made available to three groups of outlets in the following order of priority: (1) The Munitions Board and other Federal agencies that wish to use food commodities in making payment for goods not produced in the United States; (2) School lunch program and domestic private and public welfare agencies; and (3) private United States welfare organizations for the assistance of needy persons outside the United States. Commodities made available for school lunch and relief use are donated to eligible agencies at CCC storage points.

The quantities of commodities donated to private welfare agencies for overseas use, from the inception of this program in 1950 through February 23, 1954, is as follows:

Commodity	*Quantity* (Million pounds)
Nonfat dry milk solids	212.9
Butter	68.6
Cheddar cheese	18.7
Dried whole eggs	37.4
Irish potatoes	23.8

Currently, only dairy products are being made available for donation under this program.

Mr. Ferguson is Agricultural Officer and Foreign Service Staff Officer on assignment to the United States Department of Agriculture.

The **Famine Relief Program** (Public Law 216 of the 83rd Congress) expired March 15, 1954, but during its life 9,500 tons of wheat were shipped to Jordan, 72,000 tons of wheat to Bolivia, and 2,200 tons of wheat to Libya to meet famine or other urgent relief needs.

Public Law 77 (83rd Congress) authorizes not to exceed 1 million tons of CCC-owned wheat to alleviate mass suffering threatened by famine conditions in Pakistan. A total of about 680,000 tons has been made available under the program.

Section 513 (b) of the Mutual Security Act, 1951, authorizes the expenditure of up to $100 million, but not over $20 million per country, of Mutual Security funds for emergency purposes including the sending of food abroad.

The **East German Feeding Program** was carried out under Section 513 (b). In that program approximately $15 million was spent for such items as wheat flour, vegetable oils, lard, dry beans, nonfat dry milk, evaporated milk, condensed milk, canned beef, and raisins. These commodities were purchased and shipped by the United States Department of Agriculture for FOA and in some cases supplies were furnished from CCC stocks.

The **Christmas Package Program** also was conducted under Section 513 (b). Under this operation, gifts were sent to less fortunate people in Western Germany, Spain, Italy, Austria, Greece, Israel, and Lebanon, in addition to some 20 European and Latin American countries. This distribution covered a total of 60,607,000 pounds of food at a total cost of $11.8 million.

Sales by CCC of Price Support Commodities for Export. Each month CCC issues two sales announcements that show what quantities of certain of its price support stocks are available for sale during that month and at what price terms they are available. One list shows commodities, quantities, and price terms for either domestic or export use. The other list shows the same information on commodities offered for export only, usually at lower prices.

During March the export list included these commodities: Cottonseed oil, linseed oil, and shelled peanuts, all available on a bid basis; corn, available at market price; large lima beans, available at a fixed price; and wheat (other than sales under the Wheat Agreement), at Wheat Agreement levels.

In addition, other special sales are made from time to time on a competitive bid basis.

CCC also is making sales, at special prices, of surplus stocks of nonfat dry milk solids to international relief organizations, private welfare organizations, and foreign governments for school lunch relief feeding and other supplemental uses. In the past 6 months, approximately 100 million pounds have been sold for these purposes.

Under Section 4 (h) of the CCC charter Act, CCC is authorized to accept strategic and critical material produced abroad in exchange for agricultural commodities acquired by the Corporation. By the end of 1953, more than $74 million worth of these materials had been acquired in this manner, all of which have been or will be transferred to the national stockpile.

Section 32 Export Payments. The Department also is conducting certain programs to encourage exports of surpluses of commodities under Section 32 of the Act of August 24, 1935. Under these programs the Department generally makes payments to private exporters at specified rates, on certain commodities exported to eligible countries. These payments enable sales at less than the United States market price. At present, export payment programs are in effect for fresh and processed oranges and grapefruit, fresh pears, and raisins to certain countries.

The **International Wheat Agreement** Act of 1949, as amended, authorizes the President to make available such quantities of wheat and wheat flour as are required under the revised and renewed International Wheat Agreement for the period ending July 31, 1956. The annual United States export quota is 210 million bushels, and export subsidy payments are made from CCC funds. For the 1953-54 marketing year, through March 2, wheat and flour sales amounted to 83,731,000 bushels.

Programs Under Consideration

In his farm message to Congress the President recommended that authority be provided to set aside reserves from stocks presently held by CCC, up to the value of $2.5 billion, for certain uses including disaster relief aid to people in foreign countries and in a national stockpile for emergency use. In his budget message the President commented further on this matter, stating that the Administration would request that $1 billion be used to carry out foreign policy objectives and to complement United States programs of technical development of friendly countries. Special safeguards, similar to Section 550 provisions, are to be provided, which would require that commodities available under the program not displace usual foreign marketings.

Other proposals made recently regarding the exportation of our farm surpluses include plans that would extend provisions comparable to Section 550 for periods up to 3 years and would provide as much as $500 million annually for this purpose. The possibility is also being considered of using surplus agricultural commodities to obtain materials, equipment, and services needed in connection with United States military construction abroad. The President has indicated his interest in operations of this nature.

Attention is also being given by the Administration to the possible sale of United States agricultural surpluses for foreign currencies, with the proceeds to be used to meet United States Government obligations abroad. These transactions would be similar in principle to those undertaken under Section 550.

Cacao Day In Brazil

In Bahia, Brazil, where cacao is king among crops, a tradition is in the making. It is O Dia do Cacau, a day set aside each year for the improvement of that crop and the ever-popular products made from it—chocolate and cocoa.

In instituting O Dia do Cacau, Bahia is attempting to span the gap in communication between the cacao grower and the research worker and help them work together to produce a better product. On Dia do Cacau, cacao farmers are invited to visit the cacao experiment stations and there get help on pressing problems and see how technicians are handling the crop.

The first O Dia do Cacau was observed in November last year at the two cacao experiment stations in Bahia—Urucuca and Jussari. About 500 people attended, 150 of them farmers. At both stations the programs were simple; only a few subjects were covered and those were of special interest to the growers. Vegetative multiplication of cacao, application of fertilizers to the soil, and controlling diseases and pests were for example, emphasized in field demonstrations.

Synchronized Fruit Auctions In Denmark

By FRANK MEISSNER

During the past quarter century, Denmark has shifted from the position of buyer of apples to that of seller. Today the number of its apple trees is more than 600 percent higher, and last year it exported about 20 percent of the harvest. Establishment of orderly marketing channels has therefore been of vital importance.

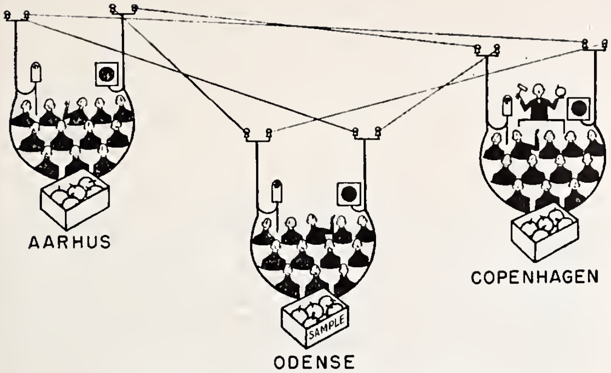
In the old days, peddlers went out to the orchards, inspected each lot, and bought for whatever price seemed "appropriate."

Soon after the commercial fruit business began to grow, however, fruit auctions were established. These auctions gave the growers an opportunity to work with wholesalers and retailers, and to obtain a better price for their commodities. Too, the auctions gave producers a chance to learn something about consumer preferences.

Danish fruit marketing was centered in Copenhagen. Since every fourth Dane lives in that capital city, it naturally constitutes the most important domestic outlet. And since it has excellent harbor facilities, it also became the center for the export market. Buyers from all over the country bought fruit from the Copenhagen auctions, which often meant crosshauling and reloading the fruit, and subjecting it to much handling and bruising.

A further disadvantage of the concentration of marketing was the lack of marketing information, which often caused producers to flood the auctions with apples. Then the producers were faced with two equally dismal alternatives: (1) to sell in the highly disadvantageous buyer's market or (2) to take the fruit home and try to sell it later or someplace else.

Shortly before World War II, A. Rand, Director of Fruit and Vegetable Auctions in Copenhagen, introduced sales by samples, a method similar to the practices used on the large United States grain exchanges. Under this method of marketing the seller delivered a box or crate representative of the fruit he intended to sell, and indicated how much of each



Synchronized fruit auction in Denmark.

kind was available. When he made a sale, he forwarded the bulk of the fruit directly to the location specified by the buyer. When he made no sale, he incurred only the minute expenses connected with the transportation of the sample.

This was not all. In order to attract as many buyers as possible, the auctions were held simultaneously in Copenhagen and Aarhus, the capital of the Jutland Peninsula. The two auction halls were in constant communication by telephone and the bids were announced continuously by loudspeakers in both places. In effect, the potential buyers were actually taking part in one rather than two auctions: They were taking part in a synchronized fruit auction.

World War II brought price control, and the auction system had to be abandoned. In 1951, synchronized auctions were reintroduced, and the auction in Odense, capital of the Island of Fuenen, was added.

This is how the system works: Suppose a grower wants to sell a load of apples. The auctions are held each Monday during the shipping season. On the Friday preceding the auction, he notifies the central office that he has apples to sell. The notification slip contains information about the (1) fruit variety, (2) quality and grade, (3) size of shipment, and (4) the lowest price the seller is willing to accept. There is a prescribed minimum quantity for each homogenous lot that the grower wants to sell. This simply means that, for any specific grade or quality that the grower wants to have individually identified, a shipment of at least 1 ton must be available.

Mr. Meissner is Teaching Assistant in Economics, College of Agriculture, University of California, Davis.

Although private brands are permitted, grading according to official standards established by the Ministry of Agriculture are very much preferred.

The next duty of the seller is to provide one, two, or all three auction halls with sample boxes of the fruit to be sold. These samples have to arrive on the Saturday morning before the Monday auction. The fruit is then inspected, and perhaps regraded, by a team of inspectors, on which the auction corporation and the growers are represented.

On Monday, all registered samples are placed in the different auction halls for inspection. Each sample has a number that refers to a catalog containing information about the size of the shipment, fruit variety, grade designation, the seller's point, and time of delivery, plus the transportation costs in ore (one Danish crown has 100 ore) per kilogram (one kilogram equals 2.2 pounds) from point of shipment to Copenhagen, Aarhus, and Odense, respectively. All auction quotations are based on f.o.b. nearest shipping point of the seller. The buyer is provided with a complete list of officially acknowledged shipping points.

The synchronized auction begins at 3:00 p.m. The auctioneer, located in a kind of broadcasting studio in Copenhagen, consolidates all the bids coming from buyers gathered in Copenhagen, Aarhus, and Odense. The selling proceeds briskly at an average rate of more than one item a minute.

When a buyer wishes to make a bid, he presses a button and his bid is registered on a screen in front of the auctioneer in Copenhagen. When the auctioneer has gotten as high a price as he can, the name of the buyer is announced on the loudspeaker. The sample case is sealed and put away, and the grower is notified as to shipping instructions and the price he is to receive.

The sample case remains sealed until delivery is made. If there are discrepancies between the grade of the sample and that of the product delivered, the grading officials promptly investigate and settle the dispute.

For the services he receives at the auction halls, the seller pays 3 percent of the selling price. The buyer pays only a nominal registration fee that covers the cost of putting him on the mailing list for the auction catalogs.

Synchronized fruit auctions are apparently satisfactory to both buyer and seller, for the plan is to extend the auction system to potatoes and other perishable products.

American Wheat Aid To Pakistan

By HENRY W. SPIELMAN

The first public-relief program in Pakistan was set up last year to make available to the people who needed it the United States grant-aid wheat that had been sent to avert threatening famine.

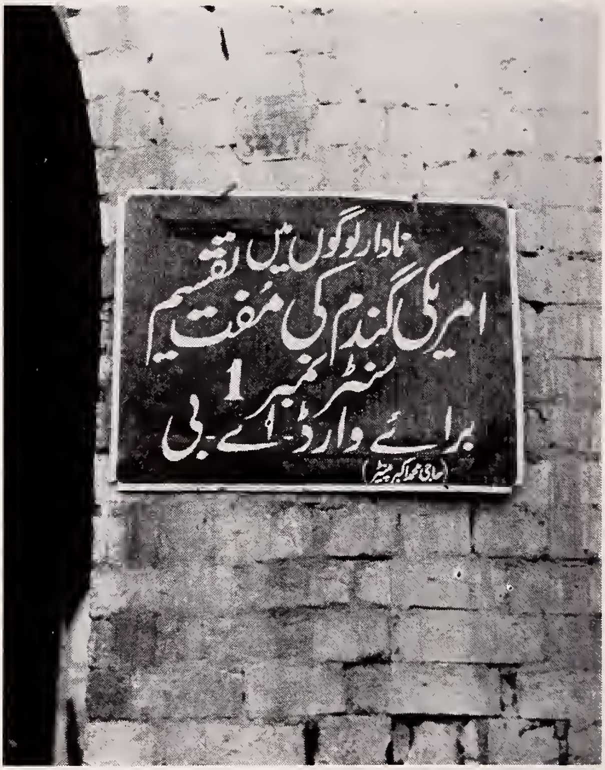
Public relief is new to Pakistan, for in that country a basic principle of society has always been that the family takes care of its own. But in the 7 years since the partition of the subcontinent into Pakistan and India, the number of people who have no family group has been increasing. For the needy among these people, the new program was in effect the family.

The program grew out of one of the conditions of the Act that granted wheat to Pakistan; it provided that no one be prevented from receiving wheat because he could not pay for it owing to conditions beyond his control. Many thousands could not.

Pakistan had suffered two successive years of drought, from May 1951 through May 1953. Grain harvests had been greatly reduced, and grain makes up a major part of the diet of all the people in the country. The first year the government met the shortage by importing more than 750,000 long tons of wheat. Some of it was supplied by a cash loan from the United States with which Pakistan bought 163,000 tons of American wheat. Most of it, however, was procured by using Pakistan's limited supply of foreign exchange and by barter deals. When that food year was over, the country had practically depleted its foreign exchange resources. By April 1953 it was clear that there was another crop failure and no money left in the treasury to buy additional wheat.

The situation was desperate.

The shortage appeared to be 1.2 million tons of wheat. The Government of Pakistan appealed to the United States, Canada, and Australia for help. Canada and Australia supplied wheat under the Colombo Plan. The United States sent to Pakistan a wheat mission headed by Dr. Harry Reed, Dean, College of Agriculture, Purdue University, to study the situation. On his return to Washington, he strongly recommended that the United States supply Pakistan with 1 million tons of wheat, 700,000 to be supplied immediately and the remainder to be supplied at the discretion of the President.



American wheat is distributed free here to destitutes, is the message on this sign that hangs at the entrance to the distribution center in Peshawar, Northwest Frontier Province, Pakistan.

Congress took prompt action on Dr. Reed's recommendation. In 2 weeks after the problem was presented, it had enacted the necessary legislation. In less than 3 weeks, the first shipload of wheat was on its way to Karachi, the capital of Pakistan. This action set a record for speed in legislative history for providing assistance to a country in dire need.

The first ship carrying American grant-aid wheat reached Karachi on July 21, 1953. The captain of

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the ship expected to be in port about 10 days while the ship was being unloaded. He sailed in 5 days. The first train, carrying 1,400 tons of wheat, was on its way to distressed areas within 30 hours after the arrival of the ship. This action, too, set a record for speed. In Pakistan, grain does not move in bulk as it does in the United States. It is handled in bags that hold one-tenth of a long ton—224 pounds. So 1,400 tons of wheat were unloaded by hand, put in bags holding 224 pounds, and loaded into freight cars, all within 30 hours.

The grain quickly entered the rationing system in the urban areas, and fair-price shops in rural communities. The arrival of this wheat assured the 10 million ration-card holders that they would get the food-grain they needed at prices they could afford to pay.

Everyone who received the wheat knew that it had come from outside the country. It was red; Pakistan wheat is white.

Most Pakistanis, except those in big cities, grind their wheat on their own hand-grinding wheel or take it to the village mill. Thus, they know that it has not been adulterated with rice flour or some other flour they do not care to eat. There are large mills in Pakistan that produce flour for the city people and for the bakeries. These mills make two types of flour. The most common type is whole-wheat flour, or atta. Much of the bread of the country is made of this flour. Some white flour is made and sold to the upper-income groups and the several thousand foreigners in the country. Outside of these groups, there is little demand for loaf bread. Most people prefer to make their own bread—a a kind of thin pancake called chappati—and eat it while it is still hot. In fact, much of it does not taste good when cold. It also becomes tough and brittle within 3 or 4 hours after baking.

American Ambassador to Pakistan, Dr. Horace A. Hildreth, distributes free-wheat ration cards to the needy in a village of Khairpur State.

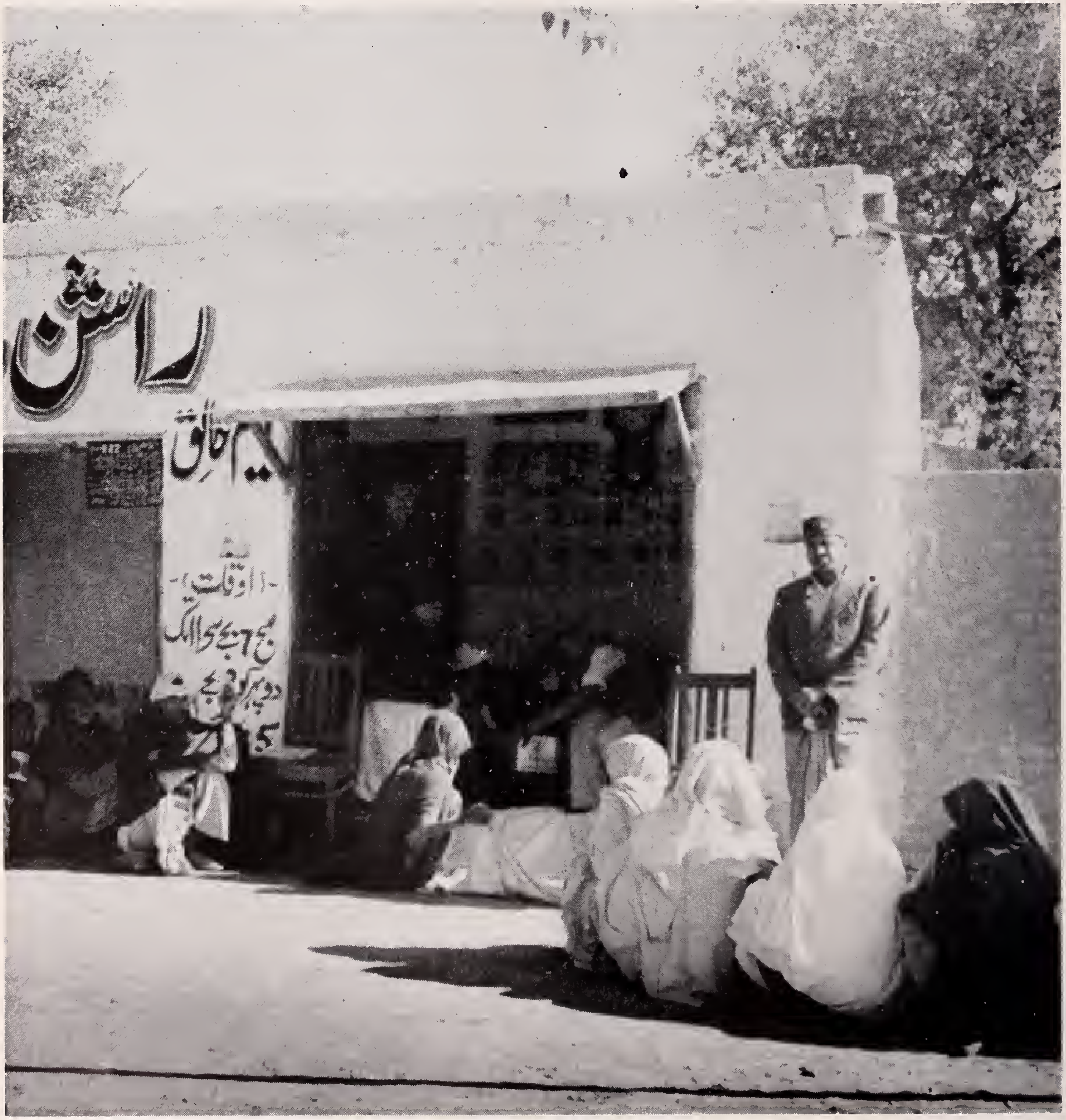
Pakistani bread is of many types, but is similar in general appearance. It is nearly always round, 8 to 12 inches in diameter, and from one-eighth to three-eighths of an inch thick. The lower-income groups frequently make a meal out of two to four of these cakes. Whenever other foods are served, the cakes are used in place of knives and forks for eating. The diner breaks off a piece and folds it into a kind of cup with the fingers of one hand. With this cup he picks up the vegetables, meat, or rice.

To carry out the conditions of the Act that granted wheat to Pakistan, the central and local governments cooperated. They did not supply food free to all who needed food. Instead, jobs were provided for unemployed and underemployed people so that they could feed themselves and their families. Most of the jobs were on public works such as roads, irrigation canals, and soil conservation projects. Underemployment had been especially widespread in the rural areas because of the small crops of the past 2 years. There had been less work in harvesting, threshing, hauling, handling and storing and in other services through the entire marketing system.

Of course, there were children, women, and disabled persons who could not work and who had no family. Many families were broken up and many wage-earning members died at the time of the partition of the subcontinent. Many people were separated from their families and have been unable to locate the surviving members. In the past, many of these people, as well as others who were needy, received help from charitable organizations.

To help distribute wheat free to these people, the Pakistan Government asked the local governing bodies to appoint committees. These committees were made up of lawyers, doctors, merchants, school teachers, bankers, Muslims, Christians, Hindus, and members of the opposition party.

The committees prepared lists of the needy people in their communities, published the lists and posted them in public places, and asked for reactions to the names on the lists. When a name was challenged on the ground that the person was not needy or when names were omitted, a member of the committee investigated, and the lists were adjusted. The final list was presented to Food Department officials, who also accepted suggestions for change. After the list was finally approved, it was



Here, needy widows and children of Multan, in Pakistan's Punjab, have been coming this year for American wheat, distributed free under the country's first public-relief program.

published and the recipients asked to pick up their food cards from the Food Department.

The government is giving these needy adults 15 pounds of wheat a month, and the children under 10 years of age, 7½ pounds. This amount has been made available during the critical preharvest months, January through April. It was during this period last year and the year before that the price of wheat was two, three, and even four times the price today. Of course, these poor people could not afford to eat wheat. Normally, they eat the cheaper coarse grains, but even these less palatable grains were generally beyond their means. They often had to go hungry. This year, thanks to the free distribution, they have had enough to eat during the cold months.

Most of the American grant-aid wheat went into regular rationing channels and was sold through such shops as this one in Karachi.

In all, at least 8 million people in West Pakistan—about one-fourth of the area's population—are receiving their food-grain requirements under the public-relief program—earning them if they can; getting them free if they cannot earn them.

During 1953 the amount of wheat supplied was smaller than it has been this year. At first it was made available, through ration shops in the cities and cheap-grain shops in rural areas, at the rate of 10 to 12 ounces a day. After the passage of the wheat aid bill by the Congress of the United States, the amount was increased to 16 ounces a day.

The price charged in the government-controlled outlets has been based on a fixed value at the seaport, Karachi, plus bagging and handling charges and freight to the consuming areas, but the price in distribution centers within a Province has been the same throughout the Province.

Since January 1, 1954, rationing has been eased, and card holders may buy as much wheat or flour as they wish and can afford. But price control has remained.

There is every indication that the famine years are over. Summer rains were good and there is ample water in the canals. Summer-grown crops produced excellent yields. Winter-grown wheat is off to a good start. If the favorable weather continues, Pakistan should be able to meet its own food-grain requirements in the year to come.

In a village in a deficit area in the Punjab, the headman told me that each day the men of the village prayed that "Emericans" would have long lives because those strangers had given them wheat when their crops had failed.

A lawyer in one of the small towns in the Punjab told me that this action on the part of the United States marked the first time in history that people in one country had been so generous with people in another, halfway round the world.

A cotton ginner in Sind Province interrupted our discussion of the cotton crop, to thank me for supplying wheat to his countrymen. His was a surplus wheat-producing area that received no American wheat. He lived more than 200 miles from the nearest distribution of American wheat—a long way in a country where word travels slowly; yet he knew about the program.

It is clear that the prompt, timely action of the United States prevented starvation in many parts of Pakistan and stands as an example of how to extend a friendly hand to a people in need.

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